

REMARKS

In response to the action of March 8, 2007, applicants asks that all claims be allowed in view of the amendment to the claims and the following remarks. This amendment is being filed concurrently with a Request for Continued Examination.

Claims 1-17, 19-36 and 38-44 are currently pending, of which claims 1, 2, 13, 20, 21 and 32 are independent. Claims 1, 2, 13, 14, 20, 21 and 32 have been amended, and claims 18 and 37 have been cancelled. Support for these amendments may be found in the application at, for example, page 16, lines 35-36 and FIGS. 19A and 19B. No new matter has been introduced.

Initially, as an administrative matter, applicant notes that an initialed copy of the Form PTO-1449 filed on March 30, 2007 has not yet been received. It is therefore respectfully requested that the Examiner return a copy of the initialed Form PTO-1449 to applicant, indicating that the Examiner has considered the references. For the Examiner's convenience, a courtesy copy of the Form PTO-1449 filed on March 30, 2007 is provided.

Provisional Non-Statutory Double Patenting Rejections

Claims 1-17, 19-36 and 38-44 are provisionally rejected as obvious over claims 1-16 of copending Application No. 10/118,917, which issued as U.S. Patent No. 7,027,074 on April 6, 2006, in view of Kuwajima (U.S. Patent No. 6,339,422). Without conceding obviousness, applicant respectfully requests that this rejection be held in abeyance until the claims of this application are otherwise held to be allowable.

Claims 1-17, 19-36 and 38-44 are provisionally rejected as obvious over claims 1-26 of copending Application No. 10/385,712 in view of Kuwajima. Without conceding obviousness, applicant respectfully requests that this provisional rejection be held in abeyance until the claims of both this application and those in Application No. 10/385,712 are otherwise held to be allowable.

Claims 1-17, 19-36 and 38-44 are provisionally rejected as obvious over claims 1-27 of copending Application No. 11/419,345. Without conceding obviousness, applicant respectfully

requests that these provisional rejections be held in abeyance until the claims of both this application and those in Application No. 11/419,345 are otherwise held to be allowable.

Rejection of Claims 1-8, 11-16, 19-27, 30-35 and 38-44

Claims 1-8, 11-16, 19-27, 30-35 and 38-44 have been rejected as being unpatentable over Tanabe (U.S. Patent Application Publication No. 2003/0011626) in view of Yamada (U.S. Patent No. 5,990,629). Applicant requests reconsideration and withdrawal of the rejection because neither Tanabe, Yamada nor any proper combination of the references describes or suggests the subject matter of independent claims 1, 2, 13, 20, 21 and 32.

Independent Claims 1, 2 and 13 and Dependent Claims 3-8, 11, 12, 14-16, 19 and 39-41

Claim 1 recites a display device that includes a display and a display controller. The display device also includes a first means that divides one frame period into subframe periods, sets one of lighting and non-lighting to each of the subframe periods, and expresses n-bits gradation (where n is a natural number of two or more) in accordance with a total lighting time during the one frame period. The display device also includes a second means that does not divide one frame period into subframe periods, that sets one of lighting and non-lighting to the one frame period, that expresses 1-bit gradation in accordance with a total lighting time during the one frame period, and that has a longer frame period as compared to the one frame period for expressing n-bits gradation. The display controller controls the first means and the second means. Each of independent claims 2 and 13 recites similar features.

Neither Tanabe, Yamada, nor any proper combination of the two describes or suggests a second means that has a longer frame period as compared to the one frame period for expressing n-bits gradation, as recited in each of independent claims 1, 2 and 13.

The action relies on Tanabe for disclosing a second means that does not divide the frame period into subframe periods, that sets one of lighting and non-lighting to the one frame period, and that expresses 1-bit gradation in accordance with a total lighting time during the one frame period, as recited in independent claims 1, 2 and 13. See action at pages 6-7 (citing Figs. 2, 4B, 6, and 8H; and paragraphs [0031, 0040, 0064 and 0065]). The action seems to rely on those same passages in Tanabe for disclosing a second means that has a longer frame period as compared to the one frame period for expressing n-bits gradation, also as recited in amended

independent claim 1 and 13 and original independent claim 2. See action at pages 6-7. Notably, the action, in rejecting original claim 2 which recites a second means that has a longer frame period as compared to the one frame period for expressing n-bits gradation, did not address this claimed feature. See action at pages 6-7. Applicant respectfully disagrees that Tanabe discloses a second means that has a longer frame period as compared to the one frame period for expressing n-bits gradation.

Rather, Tanabe discloses a method of driving a display panel where the number of sub-fields of a display period is changed according to the number of gray scale levels of an image represented by the video signal. See Tanabe at abstract and paragraph [0018]. Tanabe discloses reducing the number of sub-fields when displaying an image having a small number of display gray scale levels. See Tanabe at paragraph [0019 and 0040]. Tanabe provides examples of different driving formats. For example, Fig. 4A of Tanabe shows a driving format used when the gray scale number data indicates 3 or more gray scale levels, whereas Fig. 4B of Tanabe shows a driving format used when the gray scale number data indicates 2 or less gray scale levels. See Tanabe at Figs. 4A and 4B; and paragraphs [0040, 0064 and 0065]. In another example, Tanabe's Figs. at 8A-8H show other examples of driving formats used based on the gray scale levels of an image. See Tanabe Figs. 8A-8H; and paragraphs [0028, 0079 and 0088]. More particularly, Tanabe's Fig. 8H shows a driving format used when the gray scale levels are within the range from 1 to 2, whereas Tanabe's Fig. 8A shows a driving format used when the gray scale levels are within the range 129 to 256. See Tanabe Figs. 8A-8H; and paragraphs [0079 and 0088]. Tanabe's Figs. 2 and 6 show two possible configurations of the display apparatus in which the display panel is driven based on the disclosed driving methods. See Tanabe Figs. 2 and 6; and paragraphs [0022, 0026, 0031, 0069 and 0070].

Tanabe nowhere indicates that the display apparatus includes, among other elements, a means for having a longer frame period as compared to the one frame period for expressing n-bits gradation. Accordingly, Tanabe does not describe or suggest a second means for that has a longer frame period as compared to the one frame period for expressing n-bits gradation as recited in independent claims 1, 2 and 13.

Yamada does not remedy Tanabe's failure to disclose a second means that has a longer frame period as compared to the one frame period for expressing n-bits gradation. Nor does the

action contend that Yamada does so. Rather, the action seems to rely on Yamada for disclosing a display device having a lower driving voltage. See action at page 7.

Accordingly, neither Tanabe, Yamada, nor any proper combination of the references describes or suggests a second means that has a longer frame period as compared to the one frame period for expressing n-bits gradation, as recited in independent claims 1, 2 and 13.

For at least these reasons, applicant respectfully requests reconsideration and withdrawal of the rejection of independent claims 1, 2 and 13 and their respective dependent claims 3-8, 11, 12, 14-16, 19 and 39-41.

Independent Claims 20, 21 and 32 and Dependent Claims 22-27, 30, 31, 33-35, 38 and 42-44

Claim 20 recites, among other elements, a first display mode and a second display mode having a longer frame period than the first display mode. Each of claims 21 and 32 recites similar features.

As described above with respect to claims 1, 2 and 13, neither Tanabe, Yamada, nor any proper combination of the references describes or suggests a second means that has a longer frame period as compared to the one frame period for expressing n-bits gradation. Accordingly, neither Tanabe, Yamada, nor any proper combination of the references describes or suggests a second display mode having a longer frame period than the first display mode, as recited in claims 20, 21 and 32.

For at least these reasons, applicant respectfully requests reconsideration and withdrawal of the rejection of independent claim 20, 21 and 32 and their respective dependent claims 22-27, 30, 31, 33-35, 38 and 42-44.

Rejection of Claims 9, 10, 17, 28, 29 and 36

Claims 9, 10, 17, 28, 29 and 36, which each depend from one of independent claims 1, 2, 13, 20, 21 and 32, respectively, have been rejected as being unpatentable over Tanabe in view of Yamada and Okuda (U.S. Patent No. 6,380,689). Okuda, which is cited in the action for disclosing a frame period comprising three periods of an address period, an emission period, and a reset period, does not remedy the failure of Tanabe and Yamada to describe or suggest the subject matter of the independent claims. Accordingly, applicant respectfully requests withdrawal of the rejections of claims 9, 10, 17, 28, 29 and 36.

Applicant submits that all claims are in condition for allowance.

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this reply should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this reply, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

The fee in the amount of \$790.00 in payment of the Request for Continued Examination fee is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 12732-176001	Application No. 10/705,827
	Applicant Jun Koyama et al.		
	Filing Date November 13, 2003	Group Art Unit 2629	

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AL	EP 1 251 481	10/23/2002	Europe				
	AM							
	AN							
	AO							
	AP							

Other Documents (Include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	AQ	Copy of First Office Action, Chinese Patent Office (Application No. 200310116579.X; CN6730/6731 dated January 19, 2007), 11 pages
	AR	
	AS	
	AT	

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	